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| U.S. DEPARTMENT OF COMMERCE, PATENT AND TRADEMARK OFFICE  |   | DATE: March 29, 2006                               |
| TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE<br>(DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371   |   | U.S. APPL. NO. (if known) <b>10573888</b>          |
| INTERNATIONAL APPLICATION NO.:<br><b>PCT/JP2005/001460</b>  | INTERNATIONAL FILING DATE:<br><b>February 2, 2005</b> | PRIORITY DATE CLAIMED:<br><b>February 27, 2004</b> |
| TITLE OF INVENTION: <b>OPTICAL FUNCTIONAL WAVEGUIDE, OPTICAL MODULATOR, ARRAYED WAVEGUIDE GRATING, AND DISPERSION COMPENSATION CIRCUIT</b>  |   |  |
| APPLICANT(S) FOR DO/EO/US: <b>Hiroyuki TSUDA</b>  |   |  |
| <p>Applicant hereby submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:</p> <ol style="list-style-type: none"> <li><input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li><input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li><input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).</li> <li><input type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li><input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)):             <ol style="list-style-type: none"> <li><input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li><input type="checkbox"/> has been transmitted by the International Bureau.</li> <li><input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</li> </ol> </li> <li><input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li><input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))             <ol style="list-style-type: none"> <li><input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li><input type="checkbox"/> have been transmitted by the International Bureau.</li> <li><input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li><input checked="" type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li><input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li><input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</li> <li><input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol> <p><b>ITEMS 11. TO 16. BELOW CONCERN OTHER DOCUMENT(S) OR INFORMATION INCLUDED:</b></p> <ol style="list-style-type: none"> <li><input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li><input type="checkbox"/> a. An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.<br/> <input checked="" type="checkbox"/> b. ASSIGNEE(s) NAME(s) AND ADDRESS <u>KEIO UNIVERSITY, Tokyo, Japan</u><br/> <b>Please publish the assignee data with the application.</b></li> <li><input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.<br/> <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment</li> <li><input type="checkbox"/> A substitute specification.</li> <li><input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li><input checked="" type="checkbox"/> Other items or information: <u>15 sheets of drawings</u></li> </ol> |   |  |

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| U.S. APPLICATION NO.<br>(if known) <b>10/573888</b> |  | INTERNATIONAL APPLICATION NO.<br><b>PCT/JP2005/001460</b> |  | DATE:<br><b>March 29, 2006</b> |  |
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| 17. <input checked="" type="checkbox"/> The following fees are submitted:   |  |  |  | <b>CALCULATIONS</b> | <b>PTO USE ONLY</b> |
| <b>Basic National Fee (37 CFR 1.492(a)(1)-(5)):</b> ..... \$300.00  |  |  |  | <b>\$300.00</b>     |                     |
| <b>Search Fee - all other situations</b> ..... \$500.00   |  |  |  | <b>\$500.00</b>     |                     |
| <b>National Stage Search Fee - U.S. was the ISA</b> ..... \$100.00  |  |  |  |                     |                     |
| <b>National Stage Search Fee - search report prepared and provided to USPTO.</b> ..... \$400.00                     |  |  |  |                     |                     |
| <b>Examination Fee - all other situations</b> ..... \$200.00  |  |  |  | <b>\$200.00</b>     |                     |
| <b>National Stage Examination Fee - U.S. was IPEA and, all claims satisfy PCT Article 33(1)-(4).</b> ..... \$100.00 |  |  |  |                     |                     |
| <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>   |  |  |  | <b>\$1000.00</b>    |                     |


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| Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). the fee is \$250.00 for each additional 50 sheets of paper or fraction thereof. |              |   |            |
| Total Sheets   | Extra sheets | Number of each additional 50 or fraction thereof (round up to a whole number) | RATE       |
| 44 - 100 =   | / 50 =       |   | x \$250.00 |

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| Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than <u>  20  </u> <del>XX</del> 30 months from the earliest claimed priority date (37 CFR 1.492(e)). |  | <b>\$ 130.00</b> |  |
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| CLAIMS   | NUMBER FILED | NUMBER EXTRA | RATE        |                  |    |
| TOTAL  | 9 - 20 =     |              | X \$ 50.00  |                  |    |
| INDEPENDENT  | 1 - 3 =      |              | X \$ 200.00 |                  |    |
| Multiple dependent claims(s) (if applicable)   |              |              | + \$360.00  |                  |    |
| <b>TOTAL OF ABOVE CALCULATIONS =</b>   |              |              |             | <b>\$1130.00</b> |    |
| Reduction by 1/2 for filing by small entity, if applicable.<br>(Note 37 CFR 1.9, 1.27, 1.28)   |              |              |             |                  |    |
| <b>SUBTOTAL =</b>  |              |              |             | <b>\$1130.00</b> |    |
| Processing fee of <b>\$130.00</b> for furnishing the English translation later than <u>  20  </u> <del>XX</del> 30 months from the earliest claimed priority date (37 CFR 1.492(f)). |              |              |             | +                |    |
| <b>TOTAL NATIONAL FEE =</b>  |              |              |             | <b>\$1130.00</b> |    |
| <b>Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31).</b>                             |              |              |             |                  |    |
| <b>\$40.00 per property +</b>  |              |              |             |                  |    |
| <b>TOTAL FEES ENCLOSED =</b>   |              |              |             | <b>\$1130.00</b> |    |
|  |              |              |             | Amount to be:    |    |
|  |              |              |             | refunded         | \$ |
|  |              |              |             | charged          | \$ |

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| U.S. APPLICATION NO.<br>(if known) <b>80-777000</b>  | INTERNATIONAL APPLICATION NO.<br>PCT/JP2005/001460 | DATE:<br>March 29, 2006   |
| <p>a. <input checked="" type="checkbox"/> A check in the amount of \$ <b>1130.00</b> to cover the above fees is enclosed. (This paper is filed in triplicate)</p> <p>b. <input type="checkbox"/> Please charge my Deposit Account No. 01-2340 in the amount of \$ <input type="text"/> to cover the above fees. (A duplicate copy of this sheet is enclosed.)</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 01-2340.</p> <p>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed to request that the application be restored to pending status.</p> |  |   |
| <p>Send All Correspondence To:</p> <p>Armstrong, Kratz, Quintos, Hanson &amp; Brooks,<br/>LLP<br/>Suite 1000, 1725 K Street, N.W.<br/>Washington, D. C. 20006<br/>Tel: (202) 659-2930<br/>Fax: (202) 887-0357</p>  |  | <br><b>23850</b><br>PATENT TRADEMARK OFFICE |
| Typed or Printed Name James E. Armstrong, IV   |  | Reg. No. 42,266   |
| Signature <i>James E. Armstrong</i>  |  | Date: March 29, 2006  |

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